AMENDMENTS TO THE SPECIFICATION

Please replace the section entitled "DISCLOSURE OF THE INVENTION" beginning on page 3, line 15 and running through page 7, line 7 with the following replacement section.

The invention ~~of claim1~~ for solving these problems is a contact combustion-type gas sensor consisting of a gas detecting element that is housed in a case, said gas detecting element comprising an induction portion made of an oxidation catalyst powder and an insulating powder fixed to a heater that generates Joule heat, wherein said induction portion contains not less than 30 percent by weight of said oxidation catalyst.

In one embodiment ~~the invention of claim 2~~, said induction portion is formed by mixing said oxidation catalyst powder and said insulating powder with a solution and fixing the mixture onto the heater.

In another embodiment ~~the invention of claim 3~~, said induction portion is formed by fixing a slurry of said insulating powder to make a solidified body of said insulating powder, while in another embodiment ~~the invention of claim 4~~, the outer surface of said induction portion is formed to have a high concentration of said oxidation catalyst.

In another embodiment ~~the invention of claim 6~~, an aging process is performed to converge the sensitivity loss due to silicon vapor.

In another embodiment ~~the invention of claim 7~~, said aging process is performed by energizing the heater in the gas detecting element to make it generate heat.

In another embodiment ~~the invention of claim 8~~, the concentration of said silicon vapor is set higher than the concentration of silicon in the environment used for measurement.

In another embodiment ~~the invention of claim 10~~, the contact combustion-type gas sensor is disposed in the gas outlet path on the cathodes side of the polymer-type fuel cell to detect hydrogen in an environment that contains silicon vapor and hydrogen.

In another embodiment ~~the invention of claim 11~~, in a contact combustion-type gas sensor that carries a catalyst on a metal oxide sintered body carrier fixed to a resistance thermometer bulb, the contact combustion-type gas sensor is manufactured by being heated to 130°C to 500°C and then poisoned until fluctuations over time in the catalytic proficiency of said catalyst in an atmosphere that includes silicon compounds stabilizes to a prescribed value.

In another embodiment ~~the invention of claim 12~~, said atmosphere includes between 10 parts per million (ppm) and 30,000 ppm of at least one of hexamethyldisiloxane, hexamethyldisilazane, and hexamethyldisilane.

In another embodiment ~~the invention of claim 13~~, said atmosphere includes between 100 ppm and 20,000 ppm of at least one of hexamethyldisoloxane, hexamethyldisilazane, and hexamethyldisilane.

In another embodiment ~~the invention of claim 14~~, said atmosphere includes between 10 ppm and 30,000 ppm of at least one of hexamethyldisiloxane, hexamethyldisilazane, and hexamethyldisilane, and between 100 ppm and 40,000 ppm of hydrogen.

In another embodiment ~~the invention of claim 16~~, in a contact combustion-type gas sensor that carries a catalyst on a metal oxide sintered body carrier fixed to a resistance thermometer bulb, said metal oxide is at least one type chosen from alumina, silica, or ziolite, and poisoning is performed in advance until fluctuations over time in the catalytic proficiency of said catalyst in an atmosphere that includes silicon compounds stabilizes to a prescribed value.

In another embodiment ~~the invention of claim 23~~, the contact combustion-type gas sensor is disposed in the gas outlet path on the cathode side of the polymer-type fuel cell to detect hydrogen.

Effects of the Invention

The effects of the contact combustion-type gas sensor of the present invention will be specifically explained in the following.

The invention ~~according to claim 1~~ prevents a loss in sensitivity by aging with a poisoning procedure and prevents fluctuations in the initial sensitivity during the measurement period and fluctuations in the sensitivity over time.

The invention ~~according to claim 2~~ can fix an oxidation catalyst powder and an insulating powder to a heater simultaneously, and thereby simplify the manufacturing process.

The inventions ~~according to claims 3 and 4~~ can attain a specified sensitivity while reducing the amount of costly oxidation catalyst that is used.

The invention ~~according to claim 6~~ can prevent fluctuations in sensitivity due to silicon vapor in the use environment as much as possible.

The invention ~~according to claim 7~~ can efficiently heat a gas detecting element to a prescribed temperature without requiring a heat source in the ageing device.

The invention ~~according to claim 8~~ can more reliably prevent fluctuations in sensitivity over time.

The invention ~~according to claim 10~~ can detect flammable gas, such as hydrogen, without incurring fluctuations in sensitivity over time even in the presence of silicon vapor emitted from packing or tubes in the gas outlet path on the cathode side of a polymer-type fuel cell.

The invention ~~according to claim 11~~ can prevent fluctuations in the detection sensitivity for flammable gas over time even in an environment where silicon vapor is present.

The invention ~~according to claim 12~~ can improve the processing yield and shorten the processing time.

The invention ~~according to claim 13~~ can achieve more practical processing.

The invention ~~according to claim 14~~ can substantially reduce processing time by promoting the formation of silicon oxide from combustion of hydrogen on the element surface.

The invention ~~according to claim 15~~ can achieve a reduction in processing time while ensuring work safety.

The invention ~~according to claim 16~~ can stably and accurately measure the concentration of flammable gas without causing fluctuations in sensitivity over time even in an environment where silicon vapor is present.

The invention ~~according to claim 23~~ can detect flammable gas, such as hydrogen, without causing fluctuations in sensitivity over time even in the presence of silicon vapor emitted from packing or tubes in the gas outlet path on the cathode side of a polymer-type fuel cell.

The preferred embodiments of the invention have been described and illustrated above, it should be understood that these are exemplary of the invention and are not to be considered as limiting. Additions, omissions, substitutions, and other modifications can be made without departing from the spirit or scope of the present invention. Accordingly, the invention is not to be considered as being limited by the foregoing description, and is only limited by the scope of the appended claims.